

WHAT IS CLAIMED IS:

1 1. A method of encoding a digitized sound signal and transmitting the
2 coded digitized sound signal over a packet switched network with diversity, the method
3 comprising steps of:

4 encoding said digitized sound signal and its sound segments into at least
5 two different descriptions with respective segment descriptions, each description being a
6 representation of the sound signal with a respective set of quantization levels, wherein
7 each sound segment is represented by at least two different segment descriptions; and
8 transmitting, for each one of said sound segments, each of said at least two
9 different segment descriptions in separate data packets at different points of time, wherein
10 a predefined time interval is introduced between the transmissions of two different
11 segment descriptions of a sound segment.

1 2. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as
3 recited in claim 1, further comprising a step of grouping several segment descriptions of
4 several different sound segments together in one and the same data packet, wherein each
5 segment description of the data packet describes a sound segment in accordance with a
6 corresponding sound signal description.

1 3. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as
3 recited in claim 1, further comprising a step of grouping a first segment description of a
4 first sound segment with a second segment description of a second sound segment
5 together in one and the same data packet, wherein each segment description of the data
6 packet describes a sound segment in accordance with a corresponding sound signal
7 description.

1 4. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as
3 recited in claim 3, wherein said first sound segment and said second sound segment are
4 two consecutive sound segments of said digitized sound signal.

1 5. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as

3 recited in claim 1, wherein a data packet comprising a segment description of a sound
4 segment is transmitted over a path in said packet switched network which path is different
5 from that of a packet including another segment description of the same sound segment.

1 6. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over a packet switched network with diversity as recited
3 in claim 1, wherein said digitized sound signal is a PCM encoded bitstream.

1 7. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as
3 recited in claim 6, wherein said encoding step comprises a step of transcoding an n-bit
4 PCM representation bitstream to at least two representation bitstreams, each of the at least
5 two representation bitstreams being represented by fewer than n bits and being a
6 description of the sound signal with a respective set of quantization levels.

1 8. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over a packet switched network with diversity as recited
3 in claim 1, wherein each segment description is subject to lossless encoding prior to being
4 included in a data packet for transmission, the lossless encoding including compressing
5 the segment description by exploiting redundancies in the encoded digitized sound signal.

1 9. The method of encoding a digitized sound signal and transmitting
2 the coded digitized sound signal over the packet switched network with diversity as
3 recited in claim 8, wherein said lossless encoding comprises steps of:
4 quantizing the digitized sound samples of the sound segment;
5 generating prediction samples based on previous quantized digital sound
6 samples of said sound segment; and
7 lossless encoding the quantized digital sound samples based on the
8 generated prediction samples.

1 10. A method of receiving and decoding a coded digitized sound signal
2 from a packet switched network utilizing the diversity provided by the received packets,
3 the method comprising steps of:
4 waiting a predetermined time period for reception of at least two different
5 packets, the packets including different segment descriptions for one and the same sound
6 segment; and one of the following steps of:

7 decoding said sound signal segment based on a merger of said
8 different segment descriptions included by said at least two different packets, if
9 said different segment description are received within said time period, and
10 decoding said sound signal segment based on those, one or a
11 merger of more than one, different segment descriptions that were received within
12 said time period.

1 11. The method of receiving and decoding the coded digitized sound
2 signal from the packet switched network utilizing the diversity provided by the received
3 packets as recited in claim 10, wherein each received packet comprises several segment
4 descriptions of several different sound segments grouped together, the method comprising
5 a step of dividing successively received packets with respect to the included segment
6 descriptions, thereby obtaining several different segment descriptions for each sound
7 segment based on which said each sound segment is decoded.

1 12. The method of receiving and decoding the coded digitized sound
2 signal from the packet switched network utilizing the diversity provided by the received
3 packets as recited in claim 10, wherein said coded digitized sound signal is a PCM
4 encoded bitstream.

1 13. The method of receiving and decoding the coded digitized sound
2 signal from the packet switched network utilizing the diversity provided by the received
3 packets as recited in claim 12, wherein the merger of two segment descriptions of the
4 same sound signal segment involves transcoding at least two segment representations,
5 each represented by fewer than n bits, to a single n -bit PCM representation of said same
6 sound signal segment.

1 14. The method of receiving and decoding the coded digitized sound
2 signal from the packet switched network utilizing the diversity provided by the received
3 packets as recited in claim 10, wherein a received segment description is subject to
4 lossless decoding prior to being merged with another segment description of the same
5 sound signal segment.

1 15. The method of receiving and decoding the coded digitized sound
2 signal from the packet switched network utilizing the diversity provided by the received
3 packets as recited in claim 14, wherein said lossless decoding comprises steps of:

lossless decoding code words of a received segment description into received quantization levels;
generating prediction samples based on previously received quantized digital sound samples of said digitized sound signal;
deriving, based on the generated prediction samples, received quantized digital sound samples of said digitized sound signal from said quantization levels; and
de-quantizing said received quantized digital sound samples into digitized sound samples of said digitized sound signal.

16. A computer readable medium having computer executable instructions for causing a digitized sound signal to be encoded and transmitted over a packet switched network in such way that diversity is provided, the computer executable instructions performing steps of:

encoding said digitized sound signal and its sound segments into at least two different descriptions with respective segment descriptions, each description being a representation of the sound signal with a respective set of quantization levels, wherein each sound segment is represented by at least two different segment descriptions; and
transmitting, for each one of said sound segments, each of said at least two different segment descriptions in separate data packets at different points of time, wherein a predefined time interval is introduced between the transmissions of two different segment descriptions of a sound segment.

17. A computer readable medium having computer executable instructions for causing a digitized sound signal from a packet switched network to be received and decoded in such way that the diversity provided by the received packets is utilized, the computer executable instructions performing steps of:

waiting a predetermined time period for reception of at least two different packets, the packets including different segment descriptions for one and the same sound segment; and one of the following steps of:

decoding said sound signal segment based on a merger of said different segment descriptions included by said at least two different packets, if said different segment description are received within said time period, and

11 decoding said sound signal segment based on those, one or a
12 merger of more than one, different segment descriptions that were received within
13 said time period.

1 18. A digitized sound signal embodied on a carrier wave for a packet
2 switched network that provides diversity, wherein the digitized sound signal describes a
3 sound segment, the digitized sound signal comprising:

4 a first segment description related to the sound segment;

5 a second segment description related to the sound segment;

6 a first data packet comprising the first segment description; and

7 a second data packet comprising the second segment description, wherein:

8 the first segment description is related to a first set of quantization
9 levels,

10 the second description is related to a second set of quantization

11 levels,

12 the first segment description is different from the second segment
13 description, and

14 the first data packet is offset in time from the second data packet by
15 a predetermined time interval.

1 19. The digitized sound signal embodied on the carrier wave for the
2 packet switched network that provides diversity as recited in claim 18, wherein the first
3 set of quantization levels is different from the second set of quantization levels.

1 20. The digitized sound signal embodied on the carrier wave for the
2 packet switched network that provides diversity as recited in claim 18, wherein the first
3 data packet is separated in time from the second data packet by a predetermined time
4 period.